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Factors Associated with Doubled-Up Housing— a Common Precursor to Homelessness

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Previous research on housing problems has concentrated on the more visible homelessness rather than more intermediate forms of housing problems such as doubled-up housing. This article expands this research by analyzing entrance into doubled-up housing among a sample of adolescents. This common type of vulnerable housing has been linked to various social and psychological problems. It commonly precedes homelessness, and it potentially increases the risk of homelessness. We find that doubled-up housing frequently occurs during young adulthood and is predicted by insufficient human capital, broken social ties, and personal disabilities.

Between conventional housing and homelessness there are other forms of unstable, inadequate, and vulnerable housing. Actual homelessness is

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frequently but one stage in an overall pattern of residential instability.¹ Therefore, homelessness itself cannot be fully understood without examining other related housing problems.

We examine one such housing problem—involuntary, doubled-up housing.² Such housing typically occurs when people run into financial or social difficulties and lose their housing. Having no other place to go, they are taken in by others, such as friends or family, usually temporarily. Although typically not as serious a problem as homelessness, doubled-up housing merits study because it occurs frequently, it has been linked to various psychological and social maladies, and it often precedes spells of actual homelessness. It thus may identify who is at high risk of homelessness, and it potentially increases the risk of homelessness.

In this article, we describe doubled-up housing during the transition into adulthood, a period of great vulnerability to housing problems. We use data from a prospective longitudinal study of the transition into adulthood collected in New Zealand to determine whether the personal characteristics previously correlated with homelessness also predict the onset of doubled-up housing.

Doubled-Up Housing

People live together for a variety of reasons, and it is meaningful to distinguish between voluntary and involuntary doubled-up housing.³ When doubled-up housing is voluntary, people cohabit for various social, romantic, or economic reasons of convenience and pleasure, and each person usually considers that lodging to be his or her home. In contrast, involuntary doubled-up housing occurs when people take in others, usually temporarily, because they have no place to stay.⁴ The person being taken in typically has experienced financial or social difficulties and does not consider the doubled-up situation to be home. We concentrate here on involuntary doubled-up housing, which for convenience we will refer to simply as “doubled-up housing.”⁵

It is unclear how many people live in doubled-up housing, but wide-ranging numbers from several studies suggest that there are as many, if not substantially more, doubled-up people as there are homeless people in the United States. In a national telephone survey, Bruce Link and colleagues found that 11 percent of respondents had been doubled-up compared with 7 percent ever having been homeless.⁶ A similar finding estimated that there are roughly equal numbers of people in rural Ohio doubled-up with family members or friends as there are homeless.⁷ About 2 million single-parent families currently live in other peoples’ homes, and an estimated 186,000 children are doubled-up with relatives

or friends.⁸ The doubled-up families in New York City public housing possibly outnumber the “officially” homeless by 20 to 1.⁹

Doubling-up can result in household crowding, which has been linked to marital arguments, marital instability, psychological distress, and tension between parents and children.¹⁰ Also, young people from crowded living situations exchange less social support and are more socially withdrawn than those from less crowded situations. The resulting social isolation can lead to greater psychological distress.¹¹

Another problem with doubled-up housing is particular to young adults. Housing problems create general instability in one’s life, and this instability, in turn, might delay progress in other areas of life, such as obtaining an education or employment training. Thus, housing problems early in life can have detrimental long-term consequences.¹²

Because doubled-up housing often immediately precedes homelessness, knowing who is likely to become doubled-up may be an important indication of who ultimately becomes homeless. A strong correlation between doubled-up housing and homelessness is demonstrated in data from a nationwide telephone survey by Link and colleagues. Of the 11 percent of the general population who had been doubled-up at some point in their lives, 59 percent had also been homeless. In sharp contrast, of the 89 percent of the general population who had never been doubled-up, only 1 percent had suffered homelessness. The correlation between doubled-up housing and homelessness in these data is highly significant at $r = .69$.¹³

The relative timing of doubled-up housing and homelessness is established in data from various sources. Doubled-up housing not only correlates with homelessness, it often immediately precedes it. A study conducted in Alameda County, California, followed 479 homeless adults for 1 year. Of these study members, 221 (46%) became homeless directly after leaving the home of a relative or friend. Conversely, fewer study members (144, or 30%) subsequently left homelessness for doubled-up housing.¹⁴ Similar results were found in studies of homeless families. Approximately 85 percent of a sample of homeless mothers had been doubled-up or tripled-up with relatives or friends in apartments before becoming homeless.¹⁵ Likewise, in a sample of families staying in New York City emergency shelters, 81 percent had been doubled-up immediately prior to becoming homeless.¹⁶

Vulnerable housing not only identifies people at high risk of homelessness, it also may increase that risk. Relative to other forms of housing, doubled-up housing is unstable. Household crowding strains relationships as people have to adjust to others in such close proximity.¹⁷ This strain can be coupled with other pressures on the host, such as rental agreements limiting the number of occupants or financial and social obligations. As a result, the hosts can rescind their hospitality, and the per-

son taken in, who has little power in the situation, must leave, possibly to homelessness. Evidence for the instability of doubled-up housing comes from the Alameda County study. During a 1-year period, 61 percent of the study members who had left homelessness for doubled-up housing had returned to homelessness before the end of the study.¹⁸ Thus, it is possible that people in doubled-up housing are more likely to enter homelessness than similar people in more stable forms of housing.

Acquiring stable, independent housing can be viewed as a developmental task to be completed during the transition to adulthood as young people move out of their parents' homes. Some young adults may encounter housing problems immediately. Others might gain a tenuous grip on independent housing but do not have the wherewithal to sustain it. Studying the transition to adulthood identifies who has difficulty successfully establishing and maintaining independent housing.

Young people may be particularly vulnerable to housing problems because they sometimes leave their parents' home without having fully developed the economic and social resources needed to obtain housing. This is supported by findings that many homeless people are young. An estimated 35 percent of the adult homeless population in America is under age 30, with about 10 percent between ages 18 and 21.¹⁹ Even more individuals first enter homelessness at a young age. In a sample of homeless adults in Minneapolis, a full third reported having begun their current homeless spells at age 21 or before.²⁰ These high rates of homelessness match the concentration of other social problems in this age group, including crime, mental illness, and drug use.²¹

The study of young people leaving home offers a methodological advantage because few have experienced prior housing problems on their own. When personal characteristics are measured before the initial onset of housing problems, causal interpretation is less ambiguous. Without this temporal ordering, measured characteristics may result from, as well as cause, housing problems. With this temporal ordering, interpretation is easier.

Theoretical Frameworks and Hypotheses

We test whether personal characteristics, measured at age 15 and which have been previously correlated with homelessness, predict the occurrence of doubled-up housing, measured between ages 15 and 21. The factors found in previous studies to correlate with homelessness can be grouped into three theoretical frameworks, as suggested by Irving Piliavin, Michael Sosin, and Herb Westerfelt: human capital, social ties, and personal disabilities.²² These complementary frameworks group conceptually related individual characteristics and postulate how they might

cause homelessness. We have no reason to prefer one framework over another, but for descriptive purposes we test the relative fit of each.

Human Capital

Human capital focuses on employment and employability. Homeless adults have always endured high levels of unemployment.²³ About four out of five homeless people are unemployed, and the remainder usually have low-paying jobs such as newspaper sales, day labor, and food service.²⁴ The lack of adequate employment ultimately lessens one's ability to acquire and maintain independent housing.²⁵

Preparation for employment is rarely completed by adolescence. Therefore, we consider whether the adolescents received a secondary school certificate, which anticipates human capital. We also consider the resources of the family of origin. Economic resources of parents (e.g., income and occupational status) can play an important role in promoting human capital in children.²⁶ Because socioeconomic status of families can change over time, we consider status both at the study member's birth and at age 15.

Social Ties

This framework emphasizes the social relationships of homeless people. One view on this issue has portrayed homeless people as separate from "conventional" society. Howard Bahr and Theodore Caplow define homeless people as "unattached and isolated" from all facets of social participation, especially the family.²⁷ Another view, however, has emphasized the many relationships that exist among homeless people and the important functions that they serve.²⁸

Strong social ties with family and friends can lead directly to housing for those who need it. These ties can also provide financial aid, services, physical goods, information, emotional intimacy, and companionship.²⁹ Such interpersonal resources may buffer people when facing stressful events such as unemployment and medical conditions.³⁰ Attenuated social ties would thus diminish these buffering resources, rendering the individual more vulnerable to the various difficulties that can lead to housing problems.³¹

The ties most relevant to adolescents include those with family, friends, and school.³² We consider the presence of both parents in the home to be an important social resource. We also include the strength of ties among adolescents and their family, peers, and school. Furthermore, we incorporate residential history, based on the assumption that many residential changes reduce opportunities for sustained social ties outside the family and thus potentially reduce both social support and human capital.³³

Personal Disabilities

This framework focuses on personal disabilities and their consequences for both employment and relationships. Homeless people have high levels of physical disabilities, alcoholism, mental illness, drug use, and criminal convictions.³⁴ It is estimated that 80 percent of homeless people experience at least one of these disabilities.³⁵

Arguments that disabilities cause homelessness have an exceptionally long history. Nineteenth-century discussions were often cast in such judgmental terms as “laziness,” “immorality,” and “depravity.”³⁶ More recent versions argue that disabilities restrict individual labor market capabilities, which in turn increase the probability of chronic unemployment. Furthermore, disabilities and the daily difficulties that they create may strain relationships and lessen social support.³⁷ As put forth in the two previous frameworks, both unemployment and low social support can increase vulnerability to housing problems.

We consider disabilities most frequently associated with homelessness—poor physical health, mental illness, antisocial behavior, and substance abuse. We use two measures of antisocial behavior—self-reported delinquency and trouble with the police. Delinquency captures the breadth of antisocial behavior, while police trouble indicates its severity, as well as any possible stigmatization.³⁸

Data and Measures

The Dunedin Multidisciplinary Health and Development Study

We use data from a longitudinal study of the health, development, and behavior of a cohort of children born between April 1, 1972, and March 31, 1973, in Dunedin, New Zealand, a city of approximately 120,000 people. Perinatal data were obtained at delivery. At follow-up at age 3, 1,037 (52% males, 48% females; 91% of the eligible births) participated in the assessment, forming the base sample for the longitudinal study.³⁹

Cross-national comparisons of social problems lend confidence to the generalizability of findings to other industrialized countries. New Zealand’s rate of infant mortality (10.8/1,000) approximates that of the United States.⁴⁰ Prevalence rates of psychiatric disorders such as major depression (17%), antisocial personality (3%), and alcohol dependence (10%) in the Dunedin sample closely match the rates from two nationally representative U.S. surveys.⁴¹ Prevalence rates of women victimized by severe physical domestic violence in the Dunedin sample (13%) match rates from nationally representative U.S. surveys.⁴² The prevalence rates of crime victimization in New Zealand (28%) closely match rates from victimization surveys in the Netherlands, Canada, Australia, and the United States.⁴³ Although the U.S. rate of homicide is higher (which

may reflect the availability of firearms), rates of assault, rape, robbery, burglary, and auto theft are comparable across the five countries. Prevalence rates of self-reported property, violent, and drug-related crimes in the Dunedin study closely match rates from surveys in 14 other developed countries, including the United States.⁴⁴ In addition to similarity in the prevalence rates of many social problems, our own replication analyses using a sample of black and white youth in Pittsburgh suggest that the predictors of problem behavior outcomes are the same.⁴⁵

The Dunedin sample has been assessed with a diverse battery of psychological, medical, and sociological measures and has secured high rates of participation across 10 waves of data collection. In 1993–94, 992 (97%) of the living study members agreed to participate in the age-21 follow-up study, 953 of whom provided data about their housing conditions.⁴⁶ It was this latter group that made up our sample. The New Zealand researchers gathered retrospective monthly data at age 21 using a life history calendar (LHC), a visual method that facilitates the reliable recall of multiple life events, particularly their timing and duration.⁴⁷ Studies have found that LHC data are very reliable.⁴⁸ From the LHC, we obtained housing data for a 6-year period from age 15 to interviews at age 21.

Independent Variables

The variables presented here represent the theoretical frameworks outlined above, and, unless otherwise specified, they were measured at age 15.⁴⁹ Falling under the human capital framework is “parents’ occupational status at child’s birth,” which measures on a six-point scale the father’s occupational status when the study member was born.⁵⁰ The scale, designed for New Zealand, ranges from unskilled laborer to professional. “School certification” was a second variable under this framework, and it indicates whether study members took any secondary school certification examinations (1 = yes, 0 = no). These optional examinations are administered after 3 years of secondary education, at around age 15. The exams have important implications for subsequent social and economic achievement in New Zealand society.⁵¹ “Family income,” a third variable, is the combined gross income of both parents from all sources. The parents reported their income (New Zealand dollars) within ranges (e.g., \$0, \$1–\$1,999, \$2,000–\$4,999, etc.), which we recoded to the midpoints. “Parents’ occupational status when child was age 15,” measures such status with a six-point scale.⁵² Here, however, we use the higher status of either caregiver, whether father or mother.⁵³

To determine the effect of social ties, we measured various ties relevant to adolescents. “Family structure” assesses whether study members at age 15 lived with both biological parents (1 = both parents, 0 = one biological parent or a reconstituted family). “Parental attachment” was

assessed by a 12-item self-report measure derived from the Inventory of Parent and Peer Attachment.⁵⁴ The items measure trust in parents, communication, and alienation between parent and child. Each item is rated on a four-point Likert scale ranging from 1 (“almost never”) to 4 (“almost always or always”). “Peer attachment” was assessed by a parallel 12-item self-report measure derived from the Inventory of Parent and Peer Attachment. The psychometric properties of both attachment scales have been found to be good.⁵⁵ “School involvement” was measured with a visual analogue scale. Study members were shown a card with five concentric circles. They were to suppose that “the circle represents the activities that go on at your school” and then asked: “How far from the center of things are you?” A value of 1 (the innermost circle) indicates “the center of things” and a value of 5 (the outermost circle) indicates little involvement in school activities. “Residential changes” is the sum of residence changes experienced by study members by age 15, as reported by their primary caregivers at each interview from ages 5–15.

The personal disabilities framework included the following variables. “Poor physical health” measures the youth’s overall physical health assessed by the primary caregiver using a four-point Likert scale (1 = very good, 2 = good, 3 = fair, 4 = poor). “Mental illness” assesses symptoms of mental illness during the previous 12 months using the Diagnostic Interview Schedule for Children (DISC).⁵⁶ The DISC covers most forms of child and adolescent psychopathology contained in the *Diagnostic and Statistical Manual*, 3d ed., classification system for children and adolescents, including depression, anxiety, and inattention. The DISC was administered privately by interviewers with postgraduate training in clinical psychology.⁵⁷ We measured self-reported “delinquency” using the standardized instrument developed for the National Youth Survey, an instrument with good psychometric properties when used in the Dunedin study.⁵⁸ This variable is a “variety” score indicating how many of 24 different illegal acts were committed during the past 12 months, including theft, aggression, and damage to physical property. In private interviews, study members reported how many times they had committed each act (0 = did not commit the act, 1 = committed once or twice, 2 = committed three times or more). Variety scores are less skewed than frequency scores, and they reliably predict future antisocial outcomes.⁵⁹ “Police trouble” indicates whether, according to the primary caregiver, study members had been in trouble with the police between ages 13 and 15 (1 = yes, 0 = no).⁶⁰ “Substance abuse” indicates self-reported use of drugs and alcohol during the previous 12 months. This variable is a “variety” score indicating whether study members had bought alcohol while under age, been drunk in a public place, smoked marijuana, sniffed glue, or used harder drugs. Study members’ reports were scored on the same three-point scale used with the variable “delinquency.”⁶¹

Dependent Variable

The dependent variable used was study members' rate of housing difficulty between ages 15 and 21. Using the life history calendar, study members were asked whether at any time they had been taken in by friends or relatives because they had no place to stay, and if so, for how long. We believe that this measure taps involuntary, rather than voluntary, doubled-up housing for three reasons. The question's wording "because you had no place to stay" directly conveys the central concept of involuntary housing. The life history calendar also records when study members were living with their parents, roommates, or were traveling. Study members in these situations were not defined as doubled-up. Finally, the interviewers who administered the life history calendar reported believing that this item uncovered troubled circumstances (i.e., housing problems) rather than simply convenient living situations.⁶² Study members were also asked, "At any time were you homeless? By this we mean that you had no private place to stay, your's or anyone else's, and you had to sleep in a homeless shelter, an abandoned building, outdoors, or some other unconventional place."

Of the 953 study members completing the LHC at age 21, 114 (12%) reported doubled-up housing. This rate is comparable to data from Link and colleagues, who found that, among 20–24-year-old study members, 11 percent reported having been doubled-up. Six (0.6%) of our study members reported that they had been homeless (three of whom experienced both doubled-up housing and homelessness), which is much lower than the number found by Link and colleagues. They report that, among 20–24-year-olds, 7 percent had been homeless.⁶³ All told, 117 (12%) of the Dunedin study members experienced either doubled-up housing or homelessness. Of these, 31 (26%) had housing problems in the month immediately after leaving (perhaps being kicked out of) their parents' home. Another 58 (50%) study members had housing problems within their next three housing situations, implying that they had never firmly established independent housing. The housing problems first occurred, on average, at age 18, and they lasted an average of 3.5 months.⁶⁴

The duration measure used for study members with housing problems was the number of months from age 15 until their initial housing problem.⁶⁵ For those with no housing problems, the duration measure was the number of months from age 15 to the age-21 interview.⁶⁶ We chose age 15 because it is the end of compulsory schooling and signals transition from school to the workforce for many New Zealand youth.

Figure 1 presents the smoothed hazard of doubled-up housing. We estimated the hazard function of doubled-up housing using the life table method. We smoothed the natural logarithm of the hazard estimates using a combination of running median smoothers and the Hanning linear smoother using the statistical program STATA. The smoothed log-hazard

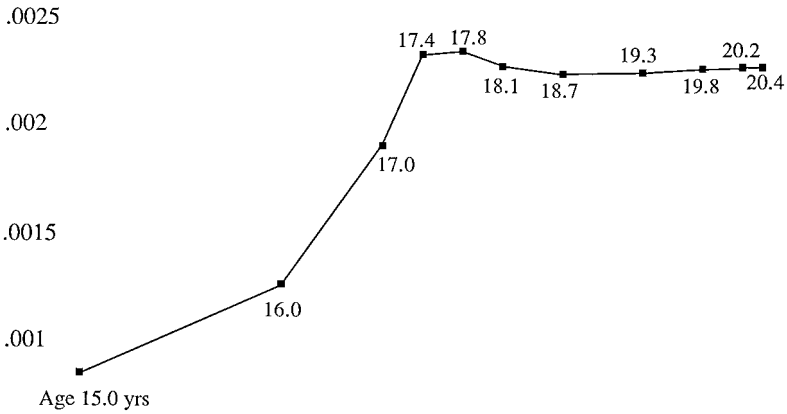


Fig. 1.—Smoothed hazard rate of doubled-up housing, ages 15–21

was then exponentiated. The hazard of doubled-up housing increases steadily until age 17, at which point it levels off until age 21.

Results

We used event-history analysis because the transition into doubled-up housing is a discrete change that can occur at any point during the age period studied. Furthermore, the data were right-censored, which poses significant problems for standard multiple regression.⁶⁷ Of possible event-history models, we chose the piecewise exponential hazard model.⁶⁸ This model expands the simple exponential model, which assumes that the hazard of housing difficulty, $r(t/x)$, varies as a log-linear function of coefficients b and variables x , but does not vary with time:⁶⁹

$$r(t/x) = \exp(bx). \tag{1}$$

The piecewise exponential model generalizes this simple exponential model by assuming that hazard rates are constant *within* time intervals but may vary *between* time intervals. Consider J prespecified time intervals $(\tau_{j-1}, \tau_j]$, where $(\tau_{j-1}, \tau_j]$ denotes the j th prespecified time interval for $j = 1, \dots, J$, and where $\tau_0 = 0$ and $\tau_j = \infty$. Then the piecewise exponential model can be written as

$$r(t|x) = \exp(b_j x), \quad \tau_{j-1} < t \leq \tau_j. \tag{2}$$

The advantage of this approach is that it analyzes both the sequence and timing of events and censoring and hence has more statistical power than partial likelihood estimation, which analyzes only the sequence of events. It also is flexible in specifying the shape of the baseline hazard, unlike the more rigid fully parametric models.⁷⁰ We fit numerous models of two, three, and four time intervals. The best fitting model had two intervals divided at age 17: 0–23 months and 24+ months. This division

is consistent with the hazard plotted in figure 1. We estimated a proportional hazard model, which assumes that the variable effects do not change across time periods.⁷¹

We present our results in table 1. The left column lists our independent variables, grouped by theoretical framework plus race and gender. The next two columns present the bivariate relationships between each independent variable and the rate of doubled-up housing. These 16 bivariate equations estimate the total effect of each variable on doubled-up housing. The entries in the columns are regression coefficients, with their associated *p*-values in parentheses. We also present the relative risk ratios for those variables with regression coefficients that were statistically significant. The final two columns present the results of a single equation with all 16 independent variables entered simultaneously. This equation estimates the direct, unique effect of each variable net of all other variables in the model. The relative risks are presented for significant variables.

In the human capital framework, the incidence of doubled-up housing during the transition to adulthood was significantly predicted ($p = .05$) by parents' low occupational status at the child's birth and lack of school certification. Study members born into families of low occupational status (occupational status at child's birth = 1) experienced doubled-up housing at rates two and one-half times (250%) that of study members from high occupational status families (occupational status at child's birth = 5).⁷² This variable is not quite statistically significant in the multivariate equation ($p = .09$), which suggests that some of its effect is mediated by other variables in the model. Study members with no school certification had rates of doubled-up housing 258% and 187% that of study members with certification in the bivariate and multivariate equations, respectively.

In the social ties framework, doubled-up housing in the transition to adulthood was significantly predicted by broken families, weak parental attachment, and frequent residential changes. Study members without both biological parents at home during adolescence had rates of doubled-up housing one and one-half times that of study members with both parents. This variable is insignificant in the multivariate model, however, which suggests that its effect is mediated by other variables. Study members with low parental attachment in adolescence (parental attachment = 14) experienced rates of doubled-up housing over twice (227%, 212%) that of study members with high attachment (parental attachment = 28). Study members whose families had made frequent residential changes during the child's youth (residential changes = 5) had rates of doubled-up housing one and one-half times (155%, 145%) higher than study members with no residential changes.

In the personal disabilities framework, doubled-up housing during the transition to adulthood was predicted by delinquent behavior. Study

Table 1

**Proportional Hazard Piecewise-Exponential Model
Predicting Housing Difficulty (*N* = 953)**

Independent Variables	Bivariate Equations		Multivariate Equations	
	Regression Coefficient	Relative Risk (%)	Regression Coefficient	Relative Risk (%)
White	-.3504 (.4043)		-.2712 (.5516)	
Male	-.0730 (.6980)		-.0983 (.6589)	
Human capital:				
Parents' occupational status at child's birth	-.2293 (.0040)	250	-.1510 (.0952)	
School certification	-.9490 (.0000)	258	-.6247 (.0189)	187
Family income (in \$1,000s) .....	.0101 (.1192)		-.0037 (.6553)	
Parents' occupational status at child's age 15	-.1399 (.0946)		.0111 (.9151)	
Social ties:				
Family structure	-.4145 (.0444)	151	-.0072 (.9760)	
Parental attachment	-.0584 (.0001)	227	-.0537 (.0058)	212
Peer attachment	-.0032 (.8468)		.0352 (.1057)	
School involvement .....	.1291 (.2740)		-.0264 (.8291)	
Residential changes .....	.0873 (.0030)	155	.0738 (.0245)	145
Personal disabilities:				
Poor physical health .....	.2109 (.2799)		.0084 (.9679)	
Mental illness .....	.0101 (.2299)		-.0050 (.5962)	
Delinquency .....	.0799 (.0001)	138	.0882 (.0141)	142
Police trouble	1.077 (.0000)	294	.7598 (.0094)	214
Substance abuse .....	.0781 (.1778)		-.1848 (.0595)	
Constant 1			-6.418 (.0000)	
Constant 2			-5.358 (.0000)	

Note.—Cells contain regression coefficients and *p*-values (in parentheses). Equation (2) fits with a log likelihood of -792.7 at 31 df. Baseline hazard has a log likelihood of -833.0. Relative risk ratios are given only for regression coefficients that are statistically significant.

members with high levels of self-reported delinquency in adolescence (delinquency = 4) had rates of doubled-up housing approximately 140 percent those of study members with no delinquency. Study members whose parents reported that the youth had had trouble with the police in adolescence had rates of doubled-up housing substantially higher than those who had experienced no police trouble. Rates were almost triple in the bivariate equation (294%) and more than double in the multivariate equation (214%).⁷³

In analyses not shown, we tested the relative fit of each conceptual framework with three separate models: the two demographic variables with the human capital variables, the social ties variables, and the personal disability variables. Bayesian information criterion (BIC) statistics were computed for each model.⁷⁴ The BIC statistic for the human capital model was 15.2; for the social ties model, it was 18.1; and for the personal disabilities model, it was 14.2. Thus, given that lower BIC scores indicate better fit of the model to the data, the personal disability model has the best relative fit, closely followed by the human capital model. The social ties model lagged somewhat behind.

Discussion

We find that many of the correlates of homelessness predict doubled-up housing during the transition to adulthood. These predictive factors, as well as those not found to predict doubled-up housing, have implications for theory and research of housing problems.

Predictive Factors

Seven factors significantly predict the risk of doubled-up housing during the transition to adulthood: low family occupational status at the teen's birth, a lack of school certification, broken family structure, weak parental attachment, frequent residential changes, delinquency, and trouble with the police. These findings have several implications.

First, each theoretical framework identifies at least two precursors of doubled-up housing. This demonstrates the conceptual value of these frameworks for the study of housing problems. It also underscores the criterion-related validity of the study.⁷⁵ This is important because, if doubled-up housing is a phenomenon unrelated to homelessness, or if housing difficulties in New Zealand differ greatly from those in the United States, we would expect not to find support for our assumptions, which were drawn from the study of homelessness in the United States.

A second implication of the findings is the importance of family of origin. Four predictors of young adults' housing problems reflect conditions in their families of origin—parent's occupational status at the youth's birth, family structure, parental attachment, and family residen-

tial history. Previous studies of housing problems have focused on individuals' characteristics.⁷⁶ This study suggests that characteristics of others, such as family members, are also relevant.

Our finding of adolescent criminal activity as a predictor of later housing problems is also of interest. It has been suggested that prison experience increases vulnerability to homelessness by disrupting social ties and hindering employment.⁷⁷ Because we measure antisocial behavior before incarceration, our finding suggests that the correlation between prison and housing problems may be spurious. Both may result from earlier antisocial behavior.

Nonpredictive Factors

Also of interest are those factors that were not statistically associated with doubled-up housing. Neither mental illness nor substance abuse predicted housing problems in our sample of young people. In contrast, in samples of adults, these two disabilities have consistently been linked with housing problems. Perhaps this apparent contradiction reflects the changing manifestation of these disabilities over the life course. For mental illness, it may be that only specific forms, such as psychoses, increase vulnerability to housing problems. Although children and adolescents suffer illnesses such as depression, anxiety, attention deficit disorders, and conduct disorders, they rarely manifest psychoses, which tend to appear after age 20.⁷⁸ Therefore, mentally ill adults would be at greater risk of housing vulnerability. Likewise, the nature of substance abuse also changes with age. Among young people, it is often experimental and differs qualitatively from the long-term, oppressive addiction found more often in later adulthood.⁷⁹ As such, adolescent substance users may not have yet damaged themselves and their relationships with others to the degree that their housing situation deteriorates.⁸⁰

Conclusion

We suggest the possibility of a two-stage model of homelessness. Previous studies have identified numerous correlates of homelessness, and these correlates sometimes have been interpreted as the direct, proximal causes of homelessness. We suggest that these factors may have a more indirect effect.⁸¹ That is, people with specific characteristics may experience higher rates of vulnerable housing (e.g., doubled-up housing) than those without these characteristics. Vulnerably housed people, in turn, experience high rates of homelessness, perhaps independent of the factors initially responsible for their vulnerable housing. Thus, the correlates of homelessness may be the antecedents to vulnerable housing rather than direct, proximal causes of homelessness. Put differently, various factors may propel individuals in the general population into vulner-

able housing, and then other, perhaps different, causal factors may push them over the edge into homelessness.⁸²

Additional, albeit indirect, evidence for this model is found in studies that compare vulnerably housed people and homeless people. These two groups appear to be more similar to each other than either is to the general population. Sosin compared vulnerably housed and homeless users of free-meal programs in Chicago and found that the two groups differed little on measures of foster care experience, marriage, alcoholism, mental illness, prison experience, work history, or current employment.⁸³ Homeless people did, however, receive lower levels of welfare benefits. Likewise, Paul Toro and colleagues compared homeless people with the never-homeless poor.⁸⁴ They found that the two groups did not significantly differ in levels of severe mental illness, physical health symptoms, social support, or social networks. The homeless respondents were, however, more likely to report substance abuse and psychological distress.

Empirical tests of this two-stage model require data not currently available, data that measure transitions from the general population to both vulnerable housing and homelessness. These data would allow a partition of the total effect of personal characteristics on homelessness into direct effects and indirect effects via forms of vulnerable housing such as doubled-up housing. Although the sampling problems involved with such a study would be formidable, data such as these are needed to expose the various causal dynamics that lead to homelessness.

Notes

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1. Kim Hopper, Ezra Susser, and Sarah Conover, "Economies of Makeshift: Deindustrialization and Homelessness in New York City," *Urban Anthropology* 14, nos. 1-3 (1985): 183-236; Michael R. Sosin, Irving Piliavin, and Herb Westerfelt, "Toward a Longitudinal Analysis of Homelessness," *Journal of Social Issues* 46, no. 4 (1990): 157-74.

2. Other forms of vulnerable housing include dilapidated housing, highly unstable housing, and financially insecure housing. See Janet Fitchen, "On the Edge of Homelessness: Rural Poverty and Housing Insecurity," *Rural Sociology* 57, no. 2 (1992): 173-93.

3. Christopher Jencks (*The Homeless* [Cambridge, Mass.: Harvard University Press, 1994]) defines both involuntary and voluntary housing and provides a rationale for distinguishing them.

4. Young adults can sometimes leave their parents' home but then return. See Frances Goldscheider, Arland Thornton, and Linda Young-DeMarco, "A Portrait of the Nest-Leaving Process in Early Adulthood," *Demography* 30, no. 4 (1993): 683-99. Such returns constitute voluntary doubled-up housing because the child, we presume, still considers his or her parents' house to be home, and the stays are frequently lengthy.

5. Researchers vary on whether to classify doubled-up housing as homelessness. See Kim

Hopper, "Homeless Old and New: The Matter of Definition," *Housing Policy Debate* 2, no. 3 (1991): 757–813. For clarity's sake, we reserve the term "homeless" for what has been termed "literal homelessness"—living on the streets or in homeless shelters. See, e.g., Peter Rossi, *Down and Out in America* (Chicago: University of Chicago Press, 1989).

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16. Beth Weitzman and James Knickman, "Patterns of Shelter Use among New York City's Homeless Families: 1988–1990: Final Report" (New York University, Health Research Program, New York University, New York, 1991).

17. Evans and Lepore (n. 11 above).

18. Wright (n. 14 above).

19. Anne B. Shlay and Peter H. Rossi, "Social Science Research and Contemporary Studies of Homelessness," *Annual Review of Sociology* 18 (1992): 129–60; Irving Piliavin and Bradley R. Entner Wright (unpublished data, 1995).

20. Piliavin and Wright (unpublished data, 1995).

21. Terrie E. Moffitt, "Life-Course Persistent and Adolescence-Limited Antisocial Behavior: A Developmental Taxonomy," *Psychological Review* 100, no. 4 (1993): 674–701; Ronald C. Kessler, Katherine A. McGonagle, Shanyang Zhao, Christopher B. Nelson, Michael Hughes, Suzann Eshleman, Hans-Ulrich Wittchen, and Kenneth S. Kendler, "Lifetime and 12-Month Prevalence of DSM-III-R Psychiatric Disorders in the United States: Results from the National Comorbidity Study," *Archives of General Psychiatry* 51 (1994): 8–19.

22. Irving Piliavin, Michael R. Sosin, and Herb Westerfelt, "Conditions Contributing to Long-Term Homelessness," Discussion Paper no. 853-87 (University of Wisconsin—Madison, Institute for Research on Poverty, 1987).

23. Alice Solenberger, *One Thousand Homeless Men: A Study of Original Records* (New York: Charities Publications Committee, 1911); Nels Anderson, *The Hobo* (Chicago: University of Chicago Press, 1923); Edwin Sutherland and Harvey Locke, *Twenty Thousand Homeless Men: A Study of Unemployed Men in Chicago Shelters* (Chicago: J. B. Lippincott, 1936); Donald J. Bogue, *Skid Row in American Cities* (Chicago: University of Chicago, Community and Family Study Center, 1963).

24. Shlay and Rossi (n. 19 above); Rossi (n. 5 above).

25. Of course, human capital does not fully determine employment status. Macroeconomic conditions can create general layoffs regardless of one's human capital, although human capital might predict subsequent reemployment.

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27. Howard Bahr and Theodore Caplow, *Old Men: Drunk and Sober* (New York: New York University Press, 1973), pp. 53–57. They distinguish three pathways to isolation. First, external changes, such as a family member's death, may leave an individual without affiliations. Second, the individual may voluntarily withdraw from society. Third, the individual may never have had ties with others, experiencing lifetime isolation. These pathways foreshadow our distinction between the loss of housing and the inability to establish it (pp. 156–57).

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29. Barry Wellman and Scott Wortley, "Community Ties and Social Support," *American Journal of Sociology* 96 (1990): 558–88; J. S. House, P. Umberson, and K. R. Landis, "Structures and Processes of Social Support," *Annual Review of Sociology* 14 (1988): 293–318.

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31. Social relationships do not guarantee social support because one's relations may be impoverished, dysfunctional, or abusive. See Snow and Anderson (n. 28 above), p. 259.

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33. James S. Coleman, "Social Capital in the Creation of Human Capital," *American Journal of Sociology* 94, suppl. (1988): s95–s120.

34. Robert Straus, "Alcohol and the Homeless Man," *Quarterly Journal of Studies on Alcohol* 7, no. 3 (1946): 360–404; David A. Snow, Susan G. Baker, Leon Anderson, and Michael Martin, "The Myth of Pervasive Mental Illness among the Homeless," *Social Problems* 33 (1986): 407–23; James D. Wright, "The Mentally Ill Homeless: What Is Myth and What Is Fact?" *Social Problems* 35, no. 2 (1988): 182–91; Irving Piliavin, Herb Westerfelt, and Elsa Elliott, "Estimating Mental Illness among the Homeless: The Effects of Choice-Based Sampling," *Social Problems* 36, no. 5 (1989): 525–31.

35. Rossi (n. 5 above).

36. William Bull, "Trampery: Its Causes, Present Aspects, and Some Suggested Remedies," *National Conference of Charities and Correction (U.S.): Session. Proceedings of the National Conference of Charities and Correction* (Boston: Geo. H. Ellis, 1886), pp. 188–206; Francis Wayland, *A Paper on Tramps Read at the Saratoga Meeting of the American Social Science Association before the Conference of State Charities* (New Haven, Conn.: Hoggs and Robinson Printers, 1877).

37. Rossi (n. 5 above); James Wright, *Address Unknown: The Homeless in America* (New York: Aldine de Gruyter, 1989).

38. We note that criminal activity could also fit into the social ties framework; theorists have linked crime to institutional disaffiliation. See Richard Cloward and Lloyd Ohlin, *Delinquency and Opportunity* (New York: Free Press, 1960); Travis Hirschi, *Causes of Delinquency* (Berkeley: University of California Press, 1969).

39. The sample and history of the study have been described in detail previously. See Phil A. Silva, "The Dunedin Multidisciplinary Health and Development Study: A Fifteen-Year Longitudinal Study," *Pediatric and Perinatal Epidemiology* 4 (1990): 96–127. The social class of fathers matched that of the general population of similar age in New Zealand, and fewer than 7 percent of the study members identify themselves as nonwhite (e.g., Maori or Polynesian), which matches the ethnic distribution of New Zealand's South Island.

40. Department of Statistics, *New Zealand Official Yearbook* (Wellington: Department of Statistics, 1993).

41. Denise Newman, Terrie E. Moffitt, Avshalom Caspi, Lynn Magdol, and Phil Silva, "Psychiatric Disorder in a Birth Cohort of Young Adults: Prevalence, Comorbidity, Clinical Significance, and New Case Incidence from Age 11 to 21," *Journal of Consulting and Clinical Psychology* 64 (1996): 552–62.

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43. Jan van Dijk and Pat Mayhew, *Criminal Victimization in the Industrial World* (The Hague: Netherlands Ministry of Justice, 1992).

44. Josine Junger-Tas, Gert Jan Terlouw, and Malcolm Klein, *Delinquent Behavior among Young People in the Western World* (New York: Kugler Publications, 1994).

45. Terrie E. Moffitt, Avshalom Caspi, Phil Silva, and Magda Stouthamer-Loeber, "Individual Differences in Personality and Intelligence Are Linked to Crime: Cross-Context Evidence from Nations, Neighborhoods, Genders, Races, and Age-Cohorts," in *Current Perspectives on Aging and the Life Cycle*, vol. 4, *Delinquency and Disrepute in the Life Course: Contextual and Dynamic Analyses*, ed. John Hagan (Greenwich, Conn.: JAI, 1995), pp. 1–34.

46. The basic research procedure involves inviting each study member to the research facility within 60 days of his or her birthday for a full day of individual data collection. The various research topics are presented as standardized modules by different trained examiners in counterbalanced order throughout the day. In addition to the daylong assessment, complementary data are gathered from sources such as parents, teachers, peer informants, schools, hospitals, and courts. Because the confidentiality of study members' previous interviews had never been violated, the study members are unusually willing to provide frank reports.

47. Briefly, the LHC is a large grid on which life trajectories and life transitions are recorded. Its rows refer to different trajectories (e.g., residential trajectories). Its columns denote time units (months) during which particular transition events may have occurred (e.g., becoming doubled-up). The result is continuous, monthly information about trajectories and transition events over several years. Life history calendars were missing for 84 study members, 17 of whom had died, 9 of whom could not be located, 19 of whom refused to participate in the entire study, 8 of whom provided incomplete data for the life history calendar interviews, and 31 of whom did not come to the research facility but were interviewed with a shorter version of the protocol. Those completing the LHC did not statistically differ in sex, ethnicity, or social class (at $p = .05$) from those not completing. For a description of the LHC, see Deborah Freedman, Arland Thornton, Don Camburn, Duane Alwin, and Linda Young-DeMarco, "The Life History Calendar: A Technique for Collecting Retrospective Data," *Sociological Methodology* 18 (1988): 37–68.

48. *Ibid.*

49. In addition to our substantive variables, we used two control variables: "white" (0 = Polynesian, Maori, and other nonwhite ethnic groups; 1 = white) and "male" (0 = female, 1 = male).

50. Warrick B. Elley and James C. Irving, "Revised Socio-economic Index for New Zealand," *New Zealand Journal of Educational Studies* 7 (1976): 153–67.

51. Department of Statistics (n. 40 above).

52. Elley and Irving (n. 50 above).

53. To test for multicollinearity between the two measures of occupational status, we reran our models twice, once dropping "occupational status at birth" and once dropping "occupational status at age 15." The substantive results did not change.

54. Gregory C. Armsden and Mark T. Greenberg, "The Inventory of Parent and Peer Attachment: Individual Differences and Their Relationship to Psychological Well-Being in Adolescence," *Journal of Youth and Adolescence* 16 (1987): 427–53.

55. Shymala Nada-Raja, Rob McGee, and Warren R. Stanton, "Perceived Attachments to Parents and Peers and Psychological Well-Being in Adolescence," *Journal of Youth and Adolescence* 21 (1992): 471–85.

56. Anthony Costello, Craig Edlebrock, R. Kalas, Marie Kessler, and S. Klaric, *Diagnostic Interview Schedule for Children* (Bethesda, Md.: National Institute of Mental Health, 1982).

57. Excluded from the mental illness scale were items tapping conduct disorder because these items overlapped with the illegal activities contained in the self-reported delinquency variable. For a description of the procedures used, see Rob McGee, Mike Feehan, Sheila M. Williams, Fiona Partridge, Phil Silva, and Jane Kelly, "DSM-III Disorders in a Large Sample of Adolescents," *Journal of the American Academy of Child and Adolescent Psychiatry* 29 (1990): 611–91.

58. Delbert S. Elliott and David Huizinga, "Improving Self-Reported Measures of Delinquency," and Terrie E. Moffitt, "Accommodating Self-Report Methods to a Low-Delinquency Culture: Experience from New Zealand," both in *Cross-National Research in Self-Reported Crime and Delinquency*, ed. M. W. Klein (Dordrecht: Kluwer Academic Press, 1989), pp. 155–86, pp. 43–66.

59. Lee N. Robins, "Sturdy Childhood Predictors of Adult Antisocial Behaviour: Replications from Longitudinal Studies," *Psychological Medicine* 8 (1978): 611–22.

60. To test for multicollinearity between the two measures of antisocial behavior, we ran our models twice, once dropping "delinquency" and once dropping "police trouble." The substantive results did not change.

61. Many of the independent variables used in our analyses had missing cases, usually ranging from 4 percent to 8 percent of the sample. Thus, we used missing-data indicators. See Roderick J. A. Little and Donald B. Rubin, *Statistical Analysis with Missing Data* (New York: Wiley, 1987). For each variable missing data, we created a corresponding dummy variable that indicated which cases were missing (1 = missing, 0 = observed). We then recoded the cases that were missing on the original variable to the variable mean, and both variables were included in our multivariate equations. To interpret these variables, each substantive variable applies only to its observed cases. Each missing-data variable, when statistically significant, indicates that study members' missing data on this measure have different rates of housing problems than those not missing data. For sensitivity analysis, we reestimated our models using only mean substitution with no change in the substantive results.

62. As discussed below, our empirical findings provide evidence for the criterion-related validity of this measure of doubled-up housing. If indeed this measure of doubled-up housing captures something other than housing troubles, then there would be little reason to think that it would be predicted by the correlates of homelessness.

63. This difference may reflect that study members in the Dunedin study were not identified as homeless until they had been so for at least 1 month. In contrast, the study by Link et al. (n. 6 above) allowed for shorter homeless spells.

64. The study members who were homeless posed an analytic difficulty. They were too few to be analyzed separately, and yet they obviously had housing problems. We therefore classified them as a competing risk. They were coded 1 if they were doubled-up before they were homeless ($N = 2$). They were coded 0 if they were homeless before being doubled-up, and they were then given the duration measure of the time until they were homeless.

65. We analyzed only the first occurrence of housing problems because too few study members ($N = 23$) had multiple housing problems for us to analyze meaningfully these later spells.

66. The censoring in these data is essentially fixed because study members were all interviewed on or about their twenty-first birthday. However, a few study members took longer to locate. We tested the independence of censoring and events by recoding all study members, whether censored or not, as having the longest duration time (80 months). For a description of this procedure, see Paul D. Allison, *Event History Analysis: Regression for Longitudinal Data* (Newbury Park, Calif.: Sage, 1984). We then reestimated our model using this new duration measure, and the substantive results did not change.

67. Nancy Brandon Tuma and Michael T. Hannan, "Approaches to the Censoring Problem in Analysis of Event Histories," in *Sociological Methodology*, ed. K. F. Schuessler (San Francisco: Jossey-Bass, 1978).

68. Nancy Brandon Tuma, Michael T. Hannan, and Lyle P. Groeneveld, "Dynamic Analysis of Event Histories," *American Journal of Sociology* 84, no. 4 (1979): 820–54; Kazuo Yamaguchi, *Event History Analysis* (Newbury Park, Calif.: Sage, 1991); Lawrence L. Wu and Nancy Brandon Tuma, "Assessing Bias and Fit of Global and Local Hazard Models," *Sociological Methods and Research* 19, no. 3 (1991): 354–87.

69. This discussion is adapted from Wu and Tuma (n. 68 above), p. 362.

70. We reestimated the equations in table 1 using simple exponential, Wiebull, and Cox models, and none of the substantive results changed.

71. We chose a proportional model for two reasons. Substantively, we had no reason for assuming that variable effects would change during the 6-year span analyzed in our study because this span comprises only one developmental period, the transition to adulthood. Statistically, we estimated both proportional and nonproportional models for eight different sets of intervals, and in seven of them, the nonproportional model did not significantly improve on the fit of the more parsimonious proportional model.

72. To compute relative risk for continuous variables, we compared study members in the ninetieth percentile of a variable's values with those in the tenth percentile. Relative risk is computed as $\exp(bx)$.

73. The missing case indicator for self-reported delinquency was also statistically significant, indicating that study members not interviewed about delinquency experienced more housing problems than those who were interviewed.

74. Bayesian information criterion statistics for event-history models are computed as $\{- (\text{chi-square test statistic}) + [\text{degrees of freedom} * \log(\text{number of events})]\}$. See Adrian Raftery, "Bayesian Model Selection in Social Research," *Sociological Methodology* 25 (1995): 111–63.

75. Edward G. Carmines and Richard A. Zeller, *Reliability and Validity Assessment* (Newbury Park, Calif.: Sage, 1979).

76. Shlay and Rossi (n. 19 above).

77. Rossi (n. 5 above); Wright, *Address Unknown* (n. 37 above).

78. Harold I. Kaplan, Benjamin J. Sadock, and Jack A. Grebb, *Synopsis of Psychiatry: Behavioral Sciences, Clinical Psychiatry* (Baltimore: Williams & Wilkins, 1991).

79. See, e.g., Harry Wechsler and Nancy Isaac, "'Binge' Drinkers at Colleges: Prevalence, Drinking Style, Time Trends, and Associated Problems," *Journal of the American Medical Association* 262 (1992): 2929–31.

80. These life-course explanations do not preclude other possible explanations, such as disabilities resulting from homelessness.

81. Additional interpretations of these correlates are feasible. As various authors have noted, the correlates of homelessness might reflect its consequences rather than causes. See Rossi (n. 5 above). Likewise, the correlates of homelessness may reflect different rates of leaving, rather than entering, homelessness. See Irving Piliavin, Bradley R. Entner Wright, Robert D. Mare, and Alex H. Westerfelt, "Exits from and Returns to Homelessness," *Social Service Review* 70, no. 1 (1996): 33–57.

82. We acknowledge that sudden and great misfortune can push people directly from stable, conventional housing into homelessness, but we believe that this is the exception rather than the rule.

83. Michael R. Sosin, "Homeless and Vulnerable Meal Program Users: A Comparison Study," *Social Problems* 39, no. 2 (1992): 170–88.

84. Paul A. Toro, Charles W. Bellavia, Chester V. Daeschler, Brian J. Owens, David D. Wall, Julie M. Passero, and David M. Thomas, "Distinguishing Homelessness from Poverty: A Comparative Study," *Journal of Consulting and Clinical Psychology* 63, no. 2 (1995): 280–89.